Application of integrated sustainability assessment: Case study of a screw design

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ABSTRACT

Sustainability can be referred to as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. For politicians, it is an attempt to shape the social; sustain the economy and preserved the environment for future generations. Balancing these three criteria is a difficult task since it involves different output measurements t. The aim of this paper is to present a new approach of evaluating sustainability at the product design stage. There are three criteria involved in this study which is manufacturing costs, carbon emission release into the air and ergonomic assessment. Analytic hierarchy process (AHP) is used to generalize the outputs of the three criteria which is then ranked accordingly. The highest score is selected as the best solution. In this paper, a simple screw design is presented as a case study.

KEYWORDS

sustainable assessment; multi-criteria decision method (MCDM); analytic hierarchy process (AHP); screw

ACKNOWLEDGMENT

The authors would like to thank the MTUN CoE secretariat for financial support under RDU121223for this project